SCHOOL BUS ACCIDENT RECONSTRUCTION, LLC

The School Bus Collision Investigation Online Newsletter

Volume 1, Issue 5

Copyright, 2012 by
Dr. Ray Turner. All rights

2005 NSBS Resolution 2
Rear-end and Underride Zones 2-3
Type C & D School Bus Rear –ends & Underrides 4
Best Practice 5
Collision Documentation 7

Preventing school bus collisions, reducing lost driver time, passenger injuries and fatalities are the Transportation Directors responsibilities. The SBCIT must provide useful, timely, and need ed information. SBCITs help Directors eliminate underlying causes, prevent similar collisions when investigations are convened rapidly, staffed and supported adequately. Reports are focused on pertinent and essential facts and causation, conducted accurately and thoroughly, concluded quickly, and reported clearly and concisely. Analytical techniques used to draw conclusions and determine causes must be valid, appropriate and easy to use.

Investigating School Bus Rear-end and Underride Collisions

Following front-end collisions the second most frequently occurring school bus accident is the rear-end collision or the added feature of an underride. Underrides may also occur at an angle to either side of the bus. This newsletter will address the investigation process for such collisions.

The 2005 National School Bus Specifications Resolution No. 6 addressed the Underride collision. Their resolutions are summarized here:

1. WHEREAS, large numbers of vehicles collide with the rear end of school buses each year, and many of these vehicles underride the school bus, resulting in serious injuries and deaths to occupants of other vehicles; and 2. WHEREAS, most Types A, B, and rear engine Type D school buses have rear bumpers with a ground clearance of approximately 20 inches, and most Type C and front engine Type D school buses have ground clearance up to 30 inches; and 3. WHEREAS, a recent increase in the installation of fuel tanks behind the rear axle between the frame rails on large school buses may increase the potential for a fire resulting from an underride crash; and 4. WHEREAS, currently the Federal government has recognized and legislated rear underride protection height of 22.4 inches for the trailer and semi-trailer industry; and 5. WHEREAS, school buses frequently stop in high-speed areas of the roadway, at railroad crossings, intersections, residential areas and other areas of the road system; and 6. WHEREAS, while underride crashes are not caused by the school bus driver, an industry focused on safety has an obligation to consider the safety of motorists that share roads with school buses; now THEREFORE, BE IT RESOLVED that the 14th National Congress on School Transportation (NCST) request the National Highway Traffic Safety Administration (NHTSA) to study and recommend appropriate action to reduce injury and death associated with underride crashes involving collisions to the rear area of school buses.

For the school bus collision investigation team most of the problems and issues identified do not directly address the most severe of collisions in order of severity:

MOST SEVERE-Passenger car rear end underride with intrusion of the Type C or D school bus rear bumper well into the passenger compartment and often resulting in fatalities. Fortunately, these collisions rarely occur within a school district. Some districts have never had this event occur with their fleet.

MOST SEVERE-Passenger cars striking at an angle the side of the bus with a Type C or D school bus side rail intrusion into the passenger compartment resulting in fatalities. Side underrides with severe intrusion are also rare but happen somewhat more frequently than rear-end intrusions. fatalities

MOST FREQUENTLY OCCURRING-Passenger vehicle rear ending the Type C or D school bus with intrusion up to the windshield without intrusion into the passenger compartment.

NEXT MOST FREQUENTLY OCCURING-Passenger vehicles striking the side of the Type C or D school bus side rail and underride up to the windshield without passenger compartment intrusion. Four types or zone collisions are illustrated below.

There is a separate issue regarding Type B school buses with weights under 10,000 lbs. and their increased vulnerability to being overturned by a passenger vehicle collision. Four types or zones below.